



## RAILWAY SYSTEM CONTROLS

*"Covering All Communications, Data Processing and Signaling"*

# 1973 ANNUAL INDEX

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 Henkels & McCoy Inc.: Rail-car vibratory plow, Oct 45  
 High voltage DC: DC transmission line is back in service, June 12  
 Highway grade crossing protection (See crossing protection)

**Hollingsworth Solderless Terminal Co.:**  
 Solderless terminals catalog, May 34  
 Solderless terminals, June 30  
 Terminal crimper, Nov/Dec 38  
 Honeywell Inc.: CTC on Union RR is computer controlled, Apr 12  
 Hotbox detectors (See detectors)

## I

**Illinois Central (See Illinois Central-Gulf)**  
**Illinois Central Gulf:**  
 1972 review—1973 outlook, Feb 9  
 Boyd, Alan S., President: RR utility cooperation seen, July 9  
 Former GM&O office tied to ICG computer, June 8  
 ICG wins flood battle at microwave site, June 10  
**Index:** 1972 index available for RSC, Sep 6  
**Indian Rys** have microwave system, July 6  
**Inductive interference:**  
 Coordination gets systems approach, Feb 15  
 Pole line conflicts under inductive interference specs, Jan 24  
**Input/Output devices:**  
 Alphanumeric keyboard, series KB200 (Ann Arbor Terminals), May 33  
 British Rys order intelligent terminals, June 12  
 Nova display 6010 visual display terminal (Data General), May 34  
**Input/Output devices installed in 1972, Jan 16**  
**Institute of Electrical & Electronic Engineers:** IEEE/ASME RR meeting April 11-12, Feb 5  
**Land transportation group in re-alignment, June 6**  
**Land transportation calls for papers, June 8**  
**Insulated rail joints:**  
 Adhesive bonded insulated joint (Intma International), Oct 45  
 Insulated rail joints (3M Co.) Oct 46  
 New insulated rail joint is made from plastic material (Portec), Oct 25  
**Intercom Systems installed in 1972, Jan 17**  
**Interconnection:**  
 AT&T reveals faults in interconnection, Aug 8  
 FCC sets July 16 for interconnect comments, June 6  
 FCC Bureau supports GE interconnection, June 6  
 Interconnection is vital to RRs, July 21  
**Interlocking:** GTW orders equipment for interlocking, June 6  
**Interlocking equipment installed in 1972, Jan 21**  
**Intermodal Transportation Systems Inc.:** Computer Identics acquires aci marketing firm, June 10  
**International Business Machines Corp.:** Computer input/output terminals  
**International Data Sciences Inc.:**  
 Model 9100 data error corrector, May 36  
 Modem test set, model 1310 TDM, Aug 36  
**International Microwave Corp.:** MCR repeater, Oct 44  
**International Telephone & Telegraph:**  
 Indian Rys have microwave system, July 6  
 ITT to be specialized common carrier, Sep 28  
 Microwave system, MI-6, Oct 45  
**Intersociety Committee on Transportation:**  
 Transport conference to be held in Denver, July 6, Aug 6  
**Intma International Inc.:** Adhesive-bonded insulated joint, Oct 45  
**Italian State Rys.** order plug-in relays, Sep 6

## K

**Kansas City Southern Lines:**  
 1972 review—1973 outlook, Feb 9  
 KCS and ACI moving ahead on car control system, May 10  
**Kentucky Utilities Co.:** Southern may electrify 338 miles of main line, July 8  
**Kerite Co.:** Insulated multiconductor signal cable, Oct 46

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**Labels, aci:** ACI reads tilted module labels, June 26  
**Labor:** Worley discusses signal training, May 10  
**Land Mobile Communications Council:** FCC should make cost study of spec center, Aug 37  
**Land Transportation Committee, IEEE:**  
 Land transportation group in re-alignment, June 6  
 Land transportation calls for papers, June 8

**Legislation:**  
 Adams is for privately owned transportation  
 July 6  
 Grade crossing safety improves, Aug 15  
 Lehigh Valley: 1972 review—1973 outlook,  
 Feb 9  
**Letters:** April RSC corner scores, July 24  
**Lightning Elimination Associates:** Lightning  
 protection system, May 34  
**Lightning protection system (Lightning Elimination Associates)** May 34  
**Locomotives—slave or remote control:** BN to  
 have 77 RCU's operating in 1973, June 8  
**Long Island:**  
 1972 review—1973 outlook, Feb 10  
 LI plans get boost from UMTA, Sep 6  
**Louisville & Nashville:**  
 1972 Review—1973 outlook, Feb 10  
 L&N plans \$10 million signal expenditure,  
 Oct 52

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**M&M Contracting Co.:** Mechanized plowing,  
 Oct 46  
**MIPCO & RACO divisions of Safetran Systems Corp.,** Feb 32  
**Magnavox Systems Inc.:** 3M will buy fax line  
 from Magnavox, July 8  
**Maine Central:** 1972 review—1973 outlook,  
 Feb 10  
**Management Information (Also see Article Highlights):**  
 Car-data relations vital to RRs, March 23  
 Low-smoke cable now available, Apr 20  
 CTC on Union RR is computer controlled,  
 Apr 12  
 RR-highway cooperation increases crossing  
 safety, May 13  
 Electrification could save money, May 22  
 Electrification has impact on signal systems,  
 May 28  
 Soo line uses aci as a daily working tool, Feb  
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 Coordination gets systems approach, Feb 15  
 Efficiency in data processing will be key goal  
 in 1973, Feb 7  
 CP Rail tests catenary in mountain territory,  
 Jan 12  
 System controls spending for 1973 should top  
 '72 by 50%, Jan 14  
 Pole line conflicts under inductive interference  
 specs, Jan 24  
**Marquardt Industrial Products Div. (See Safetran Systems Corp.)**  
**Massachusetts Bay Transportation Authority:**  
 MBTA awards transit signal contract, Mar 26  
**Mechanized plowing (M&M Contracting)** Oct  
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**Microwave:**  
 AAR opposes TMC microwave operations,  
 Oct 6  
 C&NW adds microwave in Chicago area, June  
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 FCC oks second SPCC microwave link, May 9  
 Frisco awards contract for microwave system,  
 May 32  
 GTW orders microwave, Nov/Dec 35  
 ICG wins flood battle at microwave site, June  
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 Indian Rys have microwave system, July 6  
 Many support FCC in mw rule changes, July 6  
 Microwave 2-GHz, series 200 (Wescom), Oct  
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 Microwave & Multiplex equipment (Granger  
 Associates), Oct 44  
 Microwave radio/multiplex system (Canadian  
 Marconi), Oct 38  
 Microwave radio relay system, 2-GHz (Collins  
 Radio), Oct 38  
 Microwave system, FM2000 (Farinon Elec-  
 tric), Oct 42  
 Microwave system, MI-6 (ITT Telecommunica-  
 tions), Oct 45  
 Microwave shelters (Ruf-Nek Building Co.),  
 Oct 48  
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 NW to expand its communications, June 6  
 Power Conversion gets microwave contract,  
 June 12  
 Pulse code modulation microwave (Vicom),  
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 QNS&L microwave will be expanded, July 6  
 Radio microwave, 2GHz (General Electric),  
 Oct 45  
 SP Communications continues filings to FCC  
 on microwave, Mar 6  
 SP Communications asks to use RR micro-  
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**SP Communications completes microwave,**  
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**Supergroup equipment (GTE Lenkurt),** Aug  
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**Systems and accessories catalog #7226 (Farinon Electric),** May 36  
**Three groups ask FCC to deny GE microwave,**  
 Jan 10  
**WP microwave system increases circuits,** May  
 6  
**Midwest Audio Corp.:** Midwest to build pa  
 system for WMATA cars, June 12  
**Milwaukee Road:**  
 1972 review, Feb 10  
 Milwaukee will drop electrification, Apr 18  
 Worley, B. J., vice president-chief engineer,  
 discusses signal training, May 10  
**Minicomputers: L/TC (Burroughs)** Oct 38  
**Minnesota Mining & Mfg. Co. (3M Co.):**  
 3M will buy fax line from Magnavox, July 8  
**Insulated rail joints,** Oct 46  
**Missouri-Kansas-Texas:** 1972 review—1973 out-  
 look, Feb 10  
**Missouri Pacific:**  
 1972 review—1973 outlook, Feb 10  
 MP&TP order radio systems, Jan 10  
 Blevins, W. E., Crossing Protection Engineer:  
 RR-highway cooperation increases crossing  
 safety, May 13  
 Manion, D. L., VP-Operations, works on car  
 control system, Aug 24  
 FCC grants drawbridge radio station licenses,  
 Nov/Dec 35  
**Mobile radio access system (MRAS) (Safetran)**  
 May 37  
**Mobile tone units, models MTU-1P and**  
**MTU-1H (Coeco)** Sep 30  
**Modem: GDC 201-9 (General Datacom)** Sep 31  
**Modem test set: Model 1310 TDM (Inter-**  
**national Data Sciences)** Aug 36  
**Modern Industries Inc.:** Signal construction,  
 Oct 46  
**Motorola Communications & Electronics Inc.:**  
 AMTRAK purchases 300 8-channel radios,  
 July 8  
 GTW orders microwave, Nov/Dec 35  
 Motorola supplies radio service to AMTRAK,  
 Sep 16  
 Multiplex system, MC-400, Oct 46  
 "Personal Portable FM Radio Equipment  
 and Accessories" booklet, Sep 31  
 Total RR communication systems brochure,  
 May 34  
**Muirhead Inc.:** Mercury IV mobile facsimile  
 system, May 34; Aug 34  
**Multimeter:**  
 Digital, model 8350A (John Fluke), Aug 34  
 Fluke 8000A (John Fluke), May 37  
 Multiplex: MA-5B (Northern Telecom), Sep 29  
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 Oct 42  
 Multiplex modem: model 5150 (RFL Indus-  
 tries) Oct 48  
 Multiplex system: MC-400 (Motorola), Oct 46

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**N Triple C Inc.:** Communications Services,  
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**National Academy of Sciences:** FRA and NAS  
 working on research information, Mar 26  
**National Carriers' Conference Committee:**  
 BofRS settles with RRs on wages, June 10  
**National Electric Control Co.:** Midwest firm  
 handles S&C equipment sales, May 8  
**National Research Council:** Seamon, J. H.,  
 Manager, RR Research Information Service—  
 ACI reads tilted module labels, June 26  
**National Research Council-Canada:** Hot air  
 melts snow on CP Rail, Sep 24  
**National Transportation Safety Board:** NTSB  
 recommends new work on deadman controls,  
 June 8  
**Nationwide Electronic Systems Inc.:**  
 Code converter, model CC 1040/1005, Aug  
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 Code converter, CC 1038MR, Sep 29  
 Nelson Tansley Ltd.: Entelphone 526, May 33  
**New York City Transit Authority:**  
 NYCTA transit cars to have ATC units, Jan 10  
 NYCTA orders new signaling, May 6  
 NYCTA orders subway signal equipment,  
 Nov/Dec 6  
**New York Public Service Commission:** Direct  
 connection is in telephone service May 6  
**New York Telephone Co.:** PC may get phone  
 bill refunds, Sep 8  
**Nife Inc.:**  
 Sales reps appointed in U.S., June 12  
 Silicon controlled rectifier battery chargers,  
 Sep 21

**Nord Instruments Co.:**  
 Station selector, model NI-80A, Mar 10  
 Test set, model NI-1400, Oct 46  
**Norfolk & Western:**  
 1972 review—1973 outlook, Feb 11  
 NW orders etc, May 32  
 NW to expand its communications, June 6  
**Northern Ry., India:**  
 K. K. Gupta, Deputy Chief Signal & Tele-  
 communications Engineer, Ry Electrifica-  
 tion—Axle counters define block sections,  
 Nov/Dec 24  
**Northern Telecom Inc.:**  
 SK-1 key telephone system, May 35  
 QSE4 testing handsets, Aug 28  
 MA-5B multiplex, Sep 29  
 Northern Telecom plans new plant in NC  
 area, Nov/Dec 35

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**Okonite Co.:**  
 Okonite to acquire Simplex Wire & Cable,  
 Mar 26  
 Low-smoke cable now available, Apr 20  
 Splicing cement, May 36  
 Cable, VFR/Ls railroad, June 30  
 Signal, communications & control cables,  
 Oct 48  
**Onan Div.—Onan Corp.:** Coordination and Pro-  
 tection for Emergency and Standby Power  
 Systems "Special Report", May 37  
**Operations:** FRA considers rule making in RR  
 operations, June 23  
**Optical reader, DFR-300 (Datatype)** Aug 35  
**Overlay track circuit (Transcontrol),** Oct 50

## P

**Pace Inc.:** Bench top repair center, model  
 PRC-150A, Oct 48  
**Penn Central:**  
 1972 review, Feb 11  
 Nova computers work at Perlman Yard, May 9  
**National Transportation Safety Board recom-**  
**mends new work on deadman controls,**  
 June 8  
 PC will speed waybill processing, June 10  
 PC installs data communications, July 6  
 PC may get phone bill refunds, Sep 8  
 Highway crossing units sold by GRS, Oct 6  
**Phelps Dodge Communications Co.:** Cable  
 product line catalog, Aug 36  
**Planet Corp.:** Signal bridges, Oct 48  
 Pole line conflicts under inductive interference  
 specs, Jan 24  
**Portec, Inc.:**  
 New insulated rail joint is made from plastic  
 material, Oct 25  
 Poly-insulated rail joint, Oct 48  
**Power:** DC transmission line is back in service,  
 June 12  
**Power Conversion Products Inc.:**  
 Model TC battery charger/eliminator, June 30  
 Power Conversion gets microwave contract,  
 June 12  
**Power Supplies:**  
 Battery charger/eliminator, model TC (Power  
 Conversion Products), June 30  
 Coordination and Protection for Emergency  
 and Standby Power Systems "Special Re-  
 port" (Onan), May 37  
 Data sheets on Battery series AB-31, -32, -33,  
 (Chloride Systems), May 35  
 Primary cell electrolyte (Exide), Oct 42  
 Silicon controlled rectifier battery chargers,  
 Specifiers Guide (Nife), Sep 31  
 Silicon solar cell modules (Solar Power), Oct  
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 Solar power system (Spectrolab, Nov/Dec 38  
 Battery series AB-31, -32, -33 data sheets  
 (Chloride Systems), May 35  
 Power systems, coordination and protection for  
 emergency and standby "Special Report"  
 (Onan) May 37  
**Preston, Md., Trucking Co.:** AAR opposes  
 TMC microwave operations, Oct 6  
 Primary cell electrolyte (Exide Power Systems),  
 Oct 42  
**Printer, line, model 101 (Centronics Data**  
**Computer)** Aug 28  
**Problems and solutions:**  
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 Lightning arresters, Jan 32  
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Overlay track circuit equipment protection against lightning, Aug 29  
 Grounds on signal or communications circuits, Aug 30  
 Protectors, gas tube, series 167 (Cardion Electronics), Aug 28  
 Proven Products: Signal supplier expands product line, May 32  
 Puleo Electronics Inc.: Fiber optic control machine, Jan 29

## Q

Quan-Tech, Div. of KMS Industries Inc.: Model 2365 ac amplifier, May 34  
 Tracking wave and spectrum analyzer, model 306 TDL, July 28  
 Wave analyzer, model 304-DL  
 Quebec Cartier Mining Co. orders etc equipment, May 6  
 Quebec North Shore & Labrador: microwave will be expanded, July 6

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 Radio:  
 AMTRAK purchases 300 8-channel radios, July 8  
 BN to have 77 RCU's operating in 1973  
 Central dispatcher radio control (Safetran), Apr 24  
 FCC grants drawbridge radio station licenses, Nov/Dec 35  
 FCC should make cost study of spec center, Aug 37  
 Motorola supplies radio service to AMTRAK, Sep 16  
 RRs tell their radio usage story, Aug 6  
 Mobile radio access system (MRAS) (Safetran), May 37  
 MP-T&P order radio systems, Jan 10  
 "Personal Portable FM Radio Equipment Accessories" booklet (Motorola), Sep 31  
 Rail vehicle remote control system, bulletin No. 281 (WABCO, US&S) Aug 34  
 Radio, two-way (RCA), Oct 48  
 Radio, WABCO 4R services (WABCO, US&S), Oct 50  
 Remote control system, Emcon II (Electronic Modules), May 35  
 VHF radio antennas (Decibel Products), Oct 38  
 Waystation radio control (Bayly Engineering), Oct 36  
 Radio Corp. of America: Two-way radio, Oct 48  
 Rail-car vibratory plow (Henkels & McCoy) Oct 45  
 Rail joints:  
 Insulated (3M Co.), Oct 46  
 Poly-insulated (Portec), Oct 48  
 Adhesive bonded (Intma International), Oct 45  
 Railroad Accessories Corp. (See Safetran Systems Corp.)  
 Railroad information service: Editor's Corner: RR information service can help, May 38  
 Railroad Research Information Service: FRA and Nas working on research information Mar 26  
 ACI reads tilted module labels, June 26  
 Information service can help everyone, Oct 28  
 Rails Co.: Hot air melts snow on CP Rail, Sep 24  
 Rail vehicle remote control system, bulletin No. 281 (WABCO, US&S) Aug 34  
 Railway Equipment & Publication Co.: Directory listing, Oct 48  
 Railway Supply Co., Inc.: US&S appoints new equipment distributor, Jan 10  
 Railway System Suppliers, Inc.:  
 Systems suppliers plan for trade show, May 32  
 C&S/DSD exhibits top \$1 million, Sep 6  
 Random Thoughts—Editor's Corner: Engineers as managers; equipment installation policies: Railway Age Group, Apr 30  
 Rapid Transit:  
 MBTA awards transit signal contract, Mar 26  
 Low-smoke cable now available, Apr 20  
 Transport conference to be held in Denver, July 6  
 Sao Paulo Metro to have TV coverage, July 8  
 BART adds 21 miles of line for service, July 10  
 NYCTA orders subway signal equipment, Nov/Dec 6  
 Reading: Highway crossing units sold by GRS, Oct 6

Relay (See Communications or Signal Equipment)  
 Relay catalog 69-1 (General Railway Signal) May 36  
 Remote bridging multiple: type 6022 (Bayly Engineering), July 29  
 Remote control system: Emcon II (Electronic Modules), May 35  
 Repair center, bench top, model PRC-150A (Pace), Oct 48  
 Repair kit: electrical (AMP Special Industries), May 35  
 Repeater: MCR (International Microwave), Oct 44  
 Retarders (See Signal Equipment)  
 RFL Industries Inc.: Multiplex modem, model 5150, Oct 48  
 Rhodesia Rys use facsimile units, July 6  
 Richmond, Fredericksburg & Potomac: 1972 review, Feb 11  
 Rochester, N.Y. Telephone Corp.: Direct connection is in telephone service, May 6  
 Rock Island Lines: 1972 review, Feb 11  
 Rohr Corp.: Midwest to build pa system for WMATA cars, June 12  
 Ruf-Nek Building Co., Inc.: Microwave shelters, Oct 48

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Safetran Systems Corp.:  
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 Mobile radio access system (MRAS) May 37  
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 Safety:  
 Arrestor, WC-3GC gas filled (Western-Culler Div., Federal Sign & Signal), May 33  
 Lightning protection system (Lightning Elimination Associates) May 34  
 Grounds on signal or communications circuits, Aug 30  
 Overlay track circuit equipment protection against lightning, Aug 29  
 Gas tube protectors, Series 167 (Cardion Electronics), Aug 28  
 Hotbox detector, ES (Continental Quality Industries), Oct 38  
 Servosafe hotbox detector (Servo), Oct 49  
 Broken flange and loose wheel detectors (Wheel Checkers), Oct 52  
 St. Louis-San Francisco: (See Frisco)  
 Santa Fe Lines:  
 1972 review—1973 outlook, Feb 11  
 Helicopter strings etc code line, May 9  
 Santa Fe orders etc machine for Texas, Oct 6  
 Sass, Clifton H., Jr. & Associates: Midwest firm handles S&C equipment sales, May 8  
 Seaboard Coast Line: 1972 review—1973 outlook, Feb 11  
 Selector equipment (Atlantic Research), Oct 36  
 Selector:  
 Solid state, model 666 (Universal Technology), Oct 51  
 Station, model NI-80A (Nord) Mar 10  
 Senate Commerce Committee would fund car information system, Sep 28  
 Servo Corp of America: Servosafe Hotbox detector, Oct 49  
 Signal & Communications Division, WABCO (see Union Switch & Signal Division)  
 Signal bridges (Planet), Oct 48  
 Signal construction (Modern Industries) Oct 46  
 Signal equipment:  
 Adhesive-bonded insulated joint (Intma International), Oct 45  
 Audio Frequency overlay track circuits for new housings, (WABCO, US&S), May 35  
 CTC system (TRW Controls), Oct 49  
 Carrier system, type F2, catalog 92-3 (GRS), Mar 10  
 Colorlight signal (Safetran), Oct 49  
 Fiber optic control machine (Puleo), Jan 29  
 Grounds on signal or communications circuits, Aug 30  
 Insulated rail joints (3M), Oct 46  
 Italian State Rys order plug-in relays, Sep 6  
 LI plans get boost from UMTA, Sep 6  
 Overlay track circuit (Transcontrol), Oct 50  
 Poly-insulated rail joint (Portec), Oct 48  
 Relay catalog 69-1 (GRS), May 36  
 Retarders are key to yards, June 14  
 Signal bridges (Planet), Oct 48  
 Signal supplier expands product line, May 32  
 Static electromagnetic elements (Bedard Girard), Oct 38  
 Switch circuit controllers, catalog 81-1 (GRS), May 37  
 Traffic Master II CTC (GRS), Oct 42  
 Signal equipment installed 1968-1972, Jan 15  
 Signaling:  
 Author seeks help on signaling history, Aug 8

Axle counters define block sections, Nov/Dec 24  
 Block and cab signals, Jan 21  
 Block signal equipment installed in '72, Jan 21  
 Cab signals installed in '72, Jan 21  
 CN orders signaling for "GO" transit line, June 10  
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 Channel system, 11A (GTE Lenkurt), Aug 29  
 Crossing protection, Jan 21  
 Detectors, Jan 20  
 Editor's Corner: How much supervision, Oct 54  
 Electrification has impact on signal systems, May 28  
 Interlockings, Jan 21  
 L&N plans \$10 million signal expenditure, Oct 52  
 Market outlook for the '70's, Mar 11  
 MBTA awards transit signal contract, Mar 26  
 NYC TRANSIT orders new signaling, May 6  
 Plant improvements aid RR service, May 8  
 Signalmen serve notice on RRs, Jan 6  
 Signal planning increases in 1973, May 25  
 Slide fence, Jan 20  
 Snow melters, Jan 20  
 Switch heaters, Jan 20  
 Yards, Jan 20  
 Silicon solar cell modules (Solar Power), Oct 49  
 Simplex Wire & Cable Co.: Okonite to acquire Simplex Wire & Cable Mar 26  
 Simpson Electric Co.: Test equipment, catalog 369, July 29  
 Slide fence installations in 1972, Jan 20  
 Smith & Wesson: TV aids RR security forces, Aug 25  
 Snow melters:  
 Installations made in '72, Jan 20  
 Hot air melts snow on CP Rail, Sep 24  
 Solar Power Corp.: Silicon solar cell modules, Oct 49  
 Solar Power system (Spectrolab), Nov/Dec 38  
 Solderless terminals (Hollingsworth) June 30; catalog May 34  
 Soo Line:  
 ACI used as a daily working tool, Feb 13  
 1972 review, Feb 14  
 Sorting data recorder (Decision Data Computer), Oct 38  
 Southeastern Pennsylvania Transportation Authority: SEPTA orders train control equipment, Nov/Dec 6  
 Southern:  
 1972 review—1973 outlook, Feb 14  
 Plant improvements aid RR service, May 8  
 Southern may electrify 338 miles of main line, July 8  
 TV aids railroad security forces, Aug 25  
 Southern Sheffield, Ala., yard is in service, Sep 11  
 Radar makes fault-finding fast, Sep 20  
 New hotbox detector is available, Oct 22  
 FCC grants drawbridge radio station licenses, Nov/Dec 35  
 Southern Pacific:  
 1972 review—1973 outlook, Feb 14  
 SP installing 590 miles of etc, June 6  
 Automation reaches a high level at SP's West Colton yard, Oct 10  
 Southern Pacific Communications Co.:  
 SPC continues filings to FCC on microwave, Mar 6  
 FCC oks second SPCC microwave link, May 9  
 Many support FCC in mw rule changes, July 6  
 SP Communications asks to use RR microwave, Sep 8  
 SP Communications completes microwave  
 FCC lets SPCC to use RR microwave frequencies, Nov/Dec 6  
 Spanish Rys. (RENFE): Spanish Rys to order cab signals, Sep 8  
 Specifications are important, Aug 38  
 Spectrolab: Solar power system, Nov/Dec 38  
 Speech & Terminals, GDC 1300 series (Gen. DataComm) Jan 29  
 Splicing cement (Okonite), May 36  
 Standard Electric Lorenz: Axle counters define block sections, Nov/Dec 24  
 Static electromagnetic elements (Bedard Girard), Oct 38  
 Stewart-Warner Corp.: Datafax facsimile transceiver, model 360, Mar 10  
 Stromberg Carlson: Electronic PBX, Oct 49  
 Suggestions system (Problems and solutions), Apr 28  
 Supergroup equipment (GTE Lenkurt), Aug 36  
 Superior Continental Corp.: Two wire companies agree to cross licensing, July 8  
 Switch circuit controllers catalog 81-1 (GRS), May 37  
 Switch heaters:  
 Installed in 1972, Jan 20  
 Hot air melts snow on CP Rail, Sep 24  
 Systems and accessories catalog #7226 (Farinon Electric) May 36



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Teal Industries Inc.: Two battery firms become one, June 12  
 Technology: Application is not easy, July 30  
 Telecommunications products catalog (GTE Lenkurt) May 33  
 Telecommunications towers (Advance Industries), Oct 36  
 Telephone: Direct connection is in telephone service, May 6  
 Telephone equipment installed in 1972, Jan 17  
 Telephone equipment:  
 Telephone system, SK-1 key (Northern Literature Center), May 35  
 Electronic PBX (Stromberg Carlson), Oct 49  
 Telephone shelter boxes (Western-Cullen, Federal Sign & Signal), July 28  
 Telephone system, SK-1 key (Northern Literature Center), May 35  
 Teleprinters, receive-only (Extel), Oct 42  
 Television:  
 Sao Paulo Metro to have TV coverage, July 8  
 TV aids RR security forces, Aug 25  
 Terminal crimper (Hollingsworth) Nov/Dec 38  
 Terminal, visual display, Nova 6010 (Data General), May 34  
 Terminals, CRT, short form catalog (Ann Arbor Terminals), Sep 29  
 Test equipment:  
 Catalog 369 (Simpson Electric) July 29  
 Data error corrector, model 9100 (International Data Sciences) May 36  
 Digital voltmeter (Harmon Electronics) Nov/Dec 40  
 Meggar insulation tester (James G. Biddle) May 33  
 Multimeter, Fluke 8000A (John Fluke) May 37  
 Radar cable test set (James G. Biddle) Oct 38  
 Radar makes fault-finding fast, (James G. Biddle) Sep 20  
 Testing handsets, QSE4 (Northern Telecom) Aug 28  
 Test instruments catalog (James G. Biddle) Aug 32  
 Test set, model NI-1400 (Nord) Oct 46  
 Wave analyzer, model 304-DL (Quan-Tech Div., KMS Industries), Aug 35  
 Texas & Pacific: FCC grants drawbridge radio station licenses, Nov/Dec 35  
 Time division multiples, model 1202 (Gen. Datacom), Sep 31  
 Toronto Transit Commission: 1972 review, Feb 14  
 Total Railroad Communication Systems brochure (Motorola), May 34  
 Track circuits (See Signal Equipment)  
 Tracking wave and spectrum analyzer, model 306 TDL (Quan-Tech), July 28  
 TRAIN (Tele-Rail Automated Information Network): AAR ok's TRAIN II, July 27  
 Training:  
 Editor's Corner: Good training pays dividends, Feb 34  
 Signalmen and Rys agree on training, Apr 6  
 Transcontrol Corp.: Overlay track circuit, Oct 50  
 Transformer catalog 95-1 (GRS), July 29  
 Transportation Microwave Corp.: AAR opposes TMC microwave operations, Oct 6  
 Transport productivity requires cooperation, July 9  
 TRW Controls: CTC control system, Oct 49  
 TVA: Southern may electrify 338 miles of main line, July 8

## U

Unidata Ltd.: British Rys order intelligent terminals, June 12  
 Union Pacific:  
 1972 review, Feb 14  
 UP asks FRA for relief in cab signal tests, May 10  
 UP to upgrade line in Kansas-Nebraska, July 8  
 Union Railroad: CTC on Union RR is computer controlled, Apr 12  
 Union Switch & Signal Div., WABCO:  
 4R services WABCO radio, Oct 50  
 Audio frequency overlay track circuits for new housings, May 35  
 Automation reaches a high level at SP's West Colton yard, Oct 10  
 CTC on Union RR is computer controlled, Apr 12  
 Crossing gate, Apr 24  
 GTW orders equipment for interlocking, June 6  
 Italian State Rys order plug-in relays, Sep 6  
 MBTA awards transit signal contract, Mar 26  
 MP-T&P order radio systems, Jan 10  
 NYCTA transit cars to have ATC units, Jan 10

NYC Transit orders new signaling, May 6  
 Rail vehicle remote control system, Bulletin No. 281, Aug 34  
 Retarders are key to yards, June 14  
 Santa Fe orders CTC machine for Texas, Oct 6  
 Spanish Rys to order cab signals, Sep 8  
 UP asks FRA for relief in cab signal tests, May 10  
 US&S appoints new equipment distributor, Jan 10  
 Wheel detectors bulletin #255, Mar 10  
 Uniswitch Div. WABCO:  
 Quebec Cartier orders CTC equipment, May 6  
 CN orders signaling for "GO" transit line, June 10  
 Universal Technology Inc.: Solid state selector, model 666, Oct 51  
 United States Transmission Systems Inc.: ITT to be specialized common carrier, Sep 28  
 Urban Mass Transportation Administration:  
 LI plans get boost from UMTA, Sep 6  
 BART gets UMTA grants for reliability, Sep 6  
 U.S. Supreme Court: Turns down BN tax plea, Nov/Dec 35

## V

Vicom, Division of Vidar Corp.: Pulse code modulation microwave, Oct 50  
 Voltmeter: model 4200 digital (Harmon Electronics), Nov/Dec 40

## W

WABCO, Signal & Communications Div. (See Union Switch & Signal Division WABCO)  
 Washington Metropolitan Area Transit Authority: Midwest Audio Corp. to build pa system for WMATA cars, June 12  
 Wave analyzer: model 304-DL (Quan-Tech), Aug 35  
 Waystation radio control (Bayly Engineering), Oct 36  
 Wescom Inc.:  
 C&NW adds microwave in Chicago area, June 8  
 Microwave 2-GHz-series 200, Oct 50  
 Western-Cullen Div., Federal Sign & Signal Corp.:  
 WC-3GC arrester mountings, Jan 29  
 WC-3GC gas filled arrester, May 33  
 Telephone shelter boxes, July 28  
 W-C "walkout" cantilevers, Oct 51  
 Western Development Laboratories (Philco-Ford): Alameda yard has computerized control, May 8  
 Western Helicopters of Rialto: Helicopter strings ctc code line, May 9  
 Western Pacific:  
 1972 review, 1973 outlook, Feb 14  
 WP microwave system increases circuits, May 6  
 Westinghouse Electric Corp.: BART adds 21 miles of line for service, July 10  
 Wheel Checkers: Broken flange and loose wheel detectors, Oct 52  
 Wire (See cable)

## X

Xerox Corp.:  
 Xerox 530 general purpose computer, Apr 24  
 Facsimile, telecopier 410, Aug 36  
 Automation reaches a high level at SP's West Colton Yard, Oct 10

## Y

Yards:  
 Alameda yard has computerized control, May 8  
 Automation reaches a high level at SP's West Colton yard, Oct 10  
 BN yard contract awarded to GRS, Mar 6  
 Car-data relations vital to RRs, Mar 23  
 KCS and ACI moving ahead on car control system, May 10  
 L&N plans \$10 million signal expenditure, Oct 52  
 Nova computers work at Perlman Yard, May 9  
 Retarders and switches installed in 1972, Jan 20  
 Retarders are key to yards, June 14  
 Southern Sheffield, Ala., yard is in service, Sep 11

## PEOPLE

(\*Indicates photograph)

Abbott, Elsworth L., June 33\*  
 Adams, Rep. Brock (D-Washington) July 6  
 Adams, Gene K., Aug 32\*  
 Agnelly, Roger C., Mar 8  
 Aines, Deward M. (obit) Apr 10  
 Albee, John D., Apr 10  
 Albertson, John N., Nov/Dec 34  
 Alderman, Lynn N., Jan 30  
 Armstrong, C. F., Sep 32  
 Asnicar, V., Nov/Dec 34  
 Atman, Jay W., Mar 8  
 Ballman, Howard L., June 31  
 Bartlett, Ben T., Jan 31  
 Bartley, C. L., Nov/Dec 34  
 Begany, G. V., Nov/Dec 34  
 Best, W. D., Apr 10\*  
 Biehl, Charles, Apr 10\*  
 Billingsley, R. H., Aug 30  
 Bisset, K. D. G., Apr 10  
 Blanton, Merle C., Nov/Dec 34  
 Blatt, George B. (obit) Aug 32  
 Blevins, W. E., Sep 32; Nov/Dec 34  
 Bowman, Robert M., July 24  
 Bradfield, James L., Jan 30  
 Bradshaw, Peter C., Jan 31\*; Aug 31\*  
 Brennenman, Robert H., Sep 32  
 Brown, Bruce M., Jan 31\*  
 Brown, John Roscoe (obit) Apr 10  
 Bryant, T. M., Sep 32  
 Buckner, W. R., Mar 8  
 Burget, Vincent D., Nov/Dec 34  
 Burton, John M. (obit) Aug 32  
 Busboom, L. B., Nov/Dec 34  
 Caines, Wendell M., Nov/Dec 34  
 Carlson, J. A., Jan 30  
 Cary, Albert E., Aug 31\*  
 Casson, R. L., Apr 10  
 Cavett, P. A., Nov/Dec 34  
 Childs, Harold, Nov/Dec 34  
 Clark, Richard C., Apr 10\*  
 Clarke, H. W., Jan 30  
 Clarke, Harold J., Mar 8\*  
 Clawson, Robert G., July 24  
 Cleaver, Paul C., Apr 10  
 Clemans, A. L., Jan 30  
 Clement, Ernest P., Jan 31  
 Cole, Ned M., Jr., Nov/Dec 34  
 Cole, Theodore H., (obit) Jan 31  
 Coleman, Fred, Mar 8  
 Corcoran, Charles, Mar 8  
 Corr, D. J., Nov/Dec 34  
 Coyle, John F., Apr 10  
 Craig, J. S., June 31  
 Craven, Eugene R., Aug 30  
 Crowell, P. B., Sep 32  
 Cullum, Glen J., Apr 10\*  
 Cunningham, H. J., Jan 30  
 Cunningham, Jack, June 33  
 Dahlstrom, D. J., Sep 32  
 Dalyai, Stephen A., Mar 8  
 Daniel, Jack D., Jan 30  
 Danley, Robert L., Nov/Dec 34  
 David, Oslin P., Jr., Nov/Dec 34  
 Davies, Fredrick A., Mar 8  
 Decker, N. E., Jan 30  
 DeRitis, John A., Aug 30  
 DeWees, W. G., Nov/Dec 34  
 Dewey, Frank H., Jan 30  
 Dillenbeck, L. L., Apr 10  
 Dixon, Robert W., Jan 31  
 Dominique, Charles J., June 31\*  
 Dooley, Edward G., Mar 8  
 Douros, J. D., Nov/Dec 34  
 Dunham, F. A., Sep 32  
 Early, James R., Jan 31  
 Eason, H. V., Sep 32  
 Eaton, B. C., Sep 32  
 Eiland, Arthur C., Jr., Nov/Dec 34  
 Enters, Robert F., Mar 8; Aug 31  
 Fahringier, Robert F., Jan 31  
 Farrier, Robert A., Mar 8\*  
 Feistel, Robert L., Mar 8  
 Ferryman, David C., Apr 10\*  
 Fess, John D., Jan 31  
 Finke, Bob H., Apr 10; July 24  
 Fischer, L. W., Nov/Dec 34  
 Floyd, D. D., Jan 30  
 Forlaw, Lloyd A., June 31  
 Francis, Joe M., Sep 32  
 Freed, Louis T., Mar 8  
 French, Raymond P., Nov/Dec 34  
 Giblin, J. R., Jan 30  
 Gilbert, C. W., Aug 32\*  
 Glad, Maurice I., June 31  
 Gleason, H. Willard, Nov/Dec 34  
 Goff, William T., Nov/Dec 34  
 Graham, A. F., Mar 8  
 Graham, B. O., Jan 30  
 Grant, C. Gus, Sep 32

Gregg, T. H., Apr 10  
 Gudennath, Harold H., Apr 10\*  
 Gutshall, D. L., Jan 30  
 Hackwelder, L. R., June 31  
 Hale, George S., Apr 10  
 Haller, Daniel B., Jan 30  
 Ham, Rendal W., Jan 31  
 Hanak, Arthur T., June 31  
 Harris, Franklin S., Jan 31  
 Hayes, C. R., Apr 10  
 Haynie, B. J., Aug 30  
 Henderson, Lanny E., June 31  
 Heslep, William G., Sep 32  
 Hesler, W. D., Aug 30  
 Hibschan, H. R., June 31  
 Higginbottom, James R., Jan 31\*  
 Hindman, F. E., Sep 32  
 Hintz, Robert L., Mar 8  
 Hio, Robert B., Aug 31\*  
 Hodgens, D. W., Aug 30  
 Holland, John P., June 31  
 Holton, Edward J., Aug 31\*  
 Hovater, John H., Jan 30  
 Howell, Vincent B., Jan 30  
 Hudzikiewicz, Dan, Apr 10  
 Huntenburg, William E., Nov/Dec 34  
 Jensen, Robert P., Mar 8  
 Jett, Carl O., Sep 32  
 Joffe, Seymour, Aug 31  
 Johnson, Austin, Apr 10\*  
 Johnson, Charles R., Jr., Nov/Dec 34  
 Johnson, S. R., Jan 30  
 Judge, Thomas J., Aug 31\*  
 Kellow, Gaylord A., Mar 8  
 Kelly, Larry R., Sep 32  
 Kent, L. A., Sep 32  
 Kondra, Douglass E., Jan 31\*  
 Kross, P. R., Jan 30  
 Kull, Frederick J., June 33  
 Lafferty, W. C., June 31  
 Lagaly, Thomas C., Mar 8  
 Lawson, W. C., Aug 30  
 Lee, Alton, Nov/Dec 34  
 Lee, Ronnie L., June 33  
 Leilich, George, Mar 8  
 Lenahan, William J., Jan 31  
 Leonard, Eugene F., Apr 10\*; Aug 32  
 Lepp, Eugene C., Sep 32  
 Levesque, Michael J., Mar 8  
 Lewis, Charles E., Aug 32\*  
 Lewis, Joseph F., Sep 32  
 Lowry, C. W., June 31  
 McCauley, W. W., June 31  
 McDonald, David D., Jan 30  
 McGee, Larry (obit) Aug 32

McGuire, Michael G., Aug 30  
 McIntyre, Forrest H., June 31  
 Magnuson, Mal H., Nov/Dec 34  
 Mail, Thomas J., Nov/Dec 34  
 Manning, Thomas J., Jan 31  
 Mara, Charles E., Jr., Mar 8  
 Marbury, John B., Jr., June 33  
 Mardis, Bruce L., Sr., Apr 10  
 Marozzi, Eugene V., Jan 31  
 Marple, Thomas P., Sep 32  
 Martin, Donald W., Jan 31  
 Martin, Thomas L., June 33  
 Matejovsky, G. E., Apr 10  
 Matto, George R., Apr 10  
 Mitchell, Robert T., June 33  
 Molinari, Ralph A., Jan 31  
 Morris, Dow, Mar 8  
 Morrison, Robert, Aug 31\*  
 Neal, Ronald G., Mar 8  
 Nelson, Brian C., June 31  
 Nelson, Paul A., Nov/Dec 34  
 Niendorff, Robert G., Jan 31  
 Nightingale, P. L., June 31  
 Owens, C. S., Aug 30  
 Palmer, Howard C., Apr 10\*  
 Patterson, William J., Mar 8  
 Pearson, W. G., Sep 32  
 Perrone, Rosario A., Apr 10; July 24  
 Pinner, Douglas K., Nov/Dec 34  
 Phillips, Leland G., Apr 10\*; Aug 31\*  
 Pohle, Franklin H., Nov/Dec 34  
 Poneleit, Gerald W., Aug 32  
 Rafferty, James W., Mar 8\*  
 Ramsdell, C. Benjamin, Nov/Dec 34  
 Reagan, Teddy A., Nov/Dec 34  
 Records, John K., Aug 32\*  
 Reither, Wayne, Apr 10  
 Ressler, H. K., June 31  
 Riddle, Charles T., July 24  
 Ripley, John L., Nov/Dec 34  
 Robbins, Ronald G., Aug 31\*  
 Rochford, Thomas P., Apr 10  
 Russell, John Miles (obit) Aug 32  
 Saulnier, Paul E., Apr 10  
 Sauselein, G. J., June 31  
 Schoon, Robert L., Mar 8  
 Schroeder, R. J., Jan 30  
 Schwamb, Donald F., Jr., Jan 31  
 Schwartz, Robert L., June 33  
 Scovel, Edward S., Apr 10  
 Seamon, J. H., Jan 30  
 Semans, Frank K., Nov/Dec 34  
 Sewell, Robert T., Apr 10\*  
 Sharp, Robert A., Mar 8\*  
 Shepherd, Charles E., Aug 31\*

Sherard, Sam, Jr., June 33  
 Shoemaker, Clifford, Sep 32  
 Shultz, M. M., Sep 32  
 Slone, Wilton H., Sep 32  
 Smith, Arthur H. (obit) June 33  
 Smith, Dean E., Apr 10  
 Smith, J. L., June 31  
 Smith, M. R., Jan 30  
 Smith, Robert C., Jan 30  
 Smith, Wilson, Nov/Dec 34  
 Snyder, David N., Aug 31\*  
 Snyder, Kenneth E., Mar 8  
 Soule, Robert M., Nov/Dec 34  
 Spauling, Terence A., Nov/Dec 34  
 Stanley, M. G., Sep 32  
 Staples, J. L., Sep 32  
 Stephenson, Eric P., Sep 32  
 Stewart, Wandell W., June 31  
 Still, M., Jan 30  
 Stinson, Glenn, Nov/Dec 34  
 Sweeney, Thomas M., Jan 31  
 Szwec, T. M., Apr 10  
 Terry, Charles M. Pty., Ltd., Nov/Dec 34  
 Thomas, Raymond L., Aug 30\*  
 Thompson, Robert F., Aug 31\*  
 Thorp, Howard R., Apr 10\*  
 Tischler, Howard M., Mar 8\*  
 Tomasetti, Louis V., July 24  
 Twist, Luther A., Jan 30  
 Upchurch, Norman H., June 31  
 Vanderslice, Dr. Thomas A., Mar 8  
 Varrone, Anthony E., Jan 31  
 Wall, Elford L., Nov/Dec 34  
 Wang, Dr. K. S., Mar 8  
 Watson, William R., Sep 32  
 Webb, L. T., Jan 30  
 Wesley, J. D., Aug 30  
 Wheeler, Paul L., June 33\*  
 Wheeler, William S., Apr 10  
 White, Arthur L., Jr., June 33  
 Wickliffe, Robert K., Mar 8\*  
 Wickstrom, Stephen E., July 24  
 Wiksten, C. L., Mar 8  
 Wilson, Duncan J., Aug 30  
 Wind, E. P., Jan 30  
 Witthans, W. J., Sep 32  
 Wolf, Peter J., Nov/Dec 34  
 Wood, John W., June 33  
 Wright, Gail A., Aug 30  
 Wyman, Bryce W., July 24  
 Wynne, Raymond T., Jan 31  
 Young, Frank, Mar 8  
 Young, Harold R., Apr 10  
 Youngwerth, Frank, June 33\*



